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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,499	08/01/2003	Frank Olschewski	21295.59(H5644US)	4405
29127	7590	08/27/2007	EXAMINER	
HOUSTON ELISEEVA			ROSARIO, DENNIS	
4 MILITIA DRIVE, SUITE 4				
LEXINGTON, MA 02421			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/632,499	Applicant(s) OLSCHEWSKI, FRANK	
	Examiner Dennis Rosario	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/1/03 10 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment was received on 7/10/07. Claims 1-11 are pending.

Response to Arguments

2. Applicant's arguments filed 7/10/07 have been fully considered but they are not persuasive and states:

"The amended Claim 1 comprises the elements of determining a respective displacement vector and trajectory from the acquired images and applying an operation to the same acquired images along the trajectory. This combination is not found in Fogg..."

The examiner respectfully disagrees since Fogg as claimed discloses:

A method for optimizing the image quality of movable subjects imaged with a microscope system, comprising the following steps:

- a) acquiring images ("original reference picture" in col. 3, lines 13,14 and "current picture" in col. 3, line 15), each image having a plurality of pixels;
- b) determining a respective displacement vector field (or "areas" in col. 3, line 13 corresponding to "pixel areas displaced" in col. 16, line 12) from a comparison (or "attempt to link" in col. 3, line 13 requires a comparison of both ends that are going to be linked) of the pixels of each two chronologically successive acquired images (as shown in fig. 8B, numerals 811 and 812);
- c) identifying a trajectory (fig. 10C,num. 1026 and "trajectories" in col. 18, line 40) for each pixel (or "picture data" in col. 15, line 51) of the acquired images from the displacement vector fields; and
- d) applying an operation (fig. 11F,num. 1054) to the acquired images (corresponding to "multiple frames" in col. 18, line 41) along the identified trajectory.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5, 7-9 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Fogg (US Patent 6,466,624 B1).

Regarding claim 7, Fogg discloses an arrangement for optimizing the image quality of movable subjects imaged with a microscope system, comprising:

- a) at least one objective (or "macroblock" in col. 13, line 20 and shown in fig. 8B as a smaller square relative to fig. 8,num. 811) defining an image window,
- b) a detector unit (fig. 5,num. 503) for acquiring images each image having a plurality of pixels,
- c) a computer system (fig. 5,num. 502) comprising:
 - c1) a means for determining a respective displacement vector field ("bitstream vectors" in col. 3, lines 12,13) from a comparison (see paragraph 2, above for any remaining limitations, below, of claim 7) of the respective pixels of at least two chronologically successive acquired images,
 - c2) a means for identifying a trajectory (fig. 10c,num. 1026) for each pixel of the acquired images from the displacement vector fields, and
 - c3) a means for applying an operation (fig. 11F,num. 1054) to the acquired images along the identified trajectory.

Regarding claim 8, Fogg discloses the arrangement as defined in claim 7, wherein the means for applying an operation to the acquired images along the identified trajectory is chosen from:

- a) a deconvolution means,
- b) a smoothing means,
- c) an averaging filter, or
- d) a means for (fig 11F, num. 1118) operation acting in time-lateral (fig. 11F, num. 1054: "...temporally") fashion.

Regarding claim 9, Fogg discloses the arrangement as defined in claim 7, further comprising:

- a) a first image memory (fig. 6,num. 601) storing the acquired images;
- b) a trajectory memory (fig. 5,num. 517) storing trajectory data obtained from the acquired images; and
- b) a second image memory (fig. 6, upon the output of fig. 6, num. 609: "Storage") storing the images created by the correlation (or "correlate" in col. 18, line 41) of the images from the first image memory with the trajectory data from the trajectory memory (fig. 5,num. 517).

Regarding claim 11, Fogg discloses software on a data medium (fig. 5,num. 507), wherein the software cause a microscope system to carry out a method as defined in claim 1.

Claims 1 and 2 are rejected the same as claims 7 and 8. Thus, argument similar to that presented above for claims 7 and 8 of an arrangement is equally applicable to claims 1 and 2 of a method.

Regarding claim 3, Fogg discloses the method defined in claim 1, wherein

- a) the acquired images are conveyed to an image memory (fig. 6, num. 601);
- and
- b) data obtained from the acquired images are conveyed to an optical flow calculator (fig. 10A, num. 1001 outputs "Optical Flow Metrics" as shown upon the output of fig. 10A, num. 1001), to a trajectory tracker (fig. 10C, num. 1026), and to a trajectory memory (fig. 5, num. 517).

Regarding claim 4, Fogg discloses the method as defined in claim 3, wherein for the application of the operation, the acquired images is retrieved from the image memory (via fig. 6,num. 602) and corresponding trajectory data is retrieved from the trajectory memory (fig. 5,num. 517)in a correlated way (or “correlate” in col. 18, line 41).

Regarding claim 5, Fogg discloses the method as defined in claim 4, wherein the data generated by application of the operation is conveyed to a second image memory (fig. 6, upon the output of fig. 6, num. 609: “Storage”).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fogg (US Patent 6,466,624 B1) in view of Nybo et al. (US Patent Application Publication No.: US 2001/0052933 A1).

Regarding claim 6, Fogg does not disclose claim 6, but does teach “clues...to the nature of the captured video source and encoder-based processing” in col. 12, lines 66 to col. 13, line 1. Thus, Fogg suggests that the video source is not known since clues are needed to determine the nature of the video source and encoder-based processing, and the video source and encoder-based processing can be anything that provides a video source with encoder-based processing from which clues are to be determined.

Nybo et al. teaches a video source and as shown in fig. 1,num. 112 and associated encoder-based processing or "MPEG algorithm" in paragraph [0042], line 12 as suggested by Fogg that could possibly be used with Fogg's invention and claim 6 of a microscope system that contains:

- a) a conventional microscope (or "microscope" in paragraph [0034], last line).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to use Nybo et al.'s microscope with MPEG algorithm, because Nybo et al.'s teaching of a microscope is an "invaluable tool...used by a medical practitioner in diagnosis and treatment of patients" in paragraph [0005], last line.

Claim 10 is rejected the same as claim 6. Thus, argument similar to that presented above for claim 6 of a method is equally applicable to claim 10 of an arrangement.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Poggio et al. (US Patent 6,250,928 B1) is pertinent as creating a vector field as shown in fig. 5, num. 700 that describes motion between images.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2624

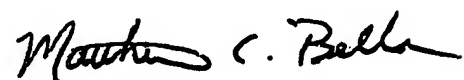
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DR
Dennis Rosario
Unit 2624



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600